

REMARKS

Claims 1-11 are pending and under consideration in the above-identified application.
Claims 12-20 stand withdrawn from consideration.

In the Office Action of May 28, 2008, claims 1-11 were rejected.

With this Amendment, claim 1 is amended. Accordingly, claims 1-11 remain at issue.

I. 35 U.S.C. § 102 Anticipation Rejection of Claims

Claims 1-4, 6-7 and 11 were rejected under 35 U.S.C. § 102(c) as being anticipated by *Inagaki* (U.S. 6,765,246) ("*Inagaki*"). Applicant respectfully traverses this rejection.

In relevant part, independent claim 1 now recites an impurity region continuously formed across substantially the entire region of the semiconductor region from one end of the semiconductor region to an opposite end of the semiconductor region in a direction orthogonal to the transfer direction of said transfer register.

This is clearly unlike *Inagaki*, which fails to disclose or even fairly suggest an impurity region continuously formed across substantially the entire region of the semiconductor region from one end of the semiconductor region to an opposite end of the semiconductor region in a direction orthogonal to the transfer direction of said transfer register. Instead, *Inagaki* discloses a first impurity region 12 and a second impurity region 13 which run in a grid pattern as shown below in Figs. 1, 2 and 3. See, U.S. Pat. No. 6,765,246, Col. 6, l. 42-46; Figs. 1, 2 and 3.

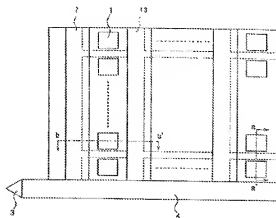


FIG. 1

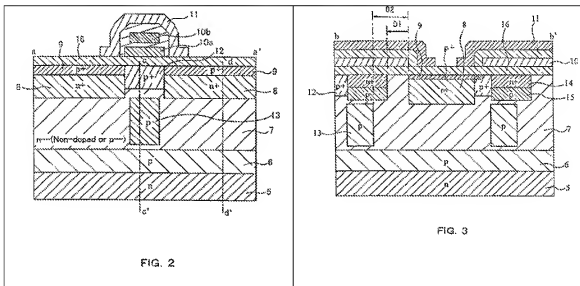


FIG. 3

Specifically, *Inagaki* states that:

“The channel stop region 13 is formed in the region corresponding to the gap between the photodiodes in the vertical direction and the region corresponding to the gap between the photodiodes in the horizontal direction. The shape of the second channel stop region 13 is not particularly limited, but the shape may be, for example, a grid shape as shown in Fig. 1.” See, U.S. Pat. No. 6,765,246, Col. 6, 1. 42-46 (emphasis added).

This is clearly unlike the claimed invention shown in the Applicant's Fig 1, shown below, which depicts an impurity region continuously formed across substantially the entire region of the semiconductor region from one end of the semiconductor region to an opposite end of the semiconductor region in a direction orthogonal to the transfer direction of said transfer register.

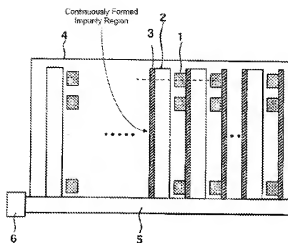


Fig. 1

Conversely, *Inagaki* discloses an impurity region 13 being formed in a grid shaped pattern around the pixel units as shown by the hatched areas in Fig. 1 below. See, U.S. Pat. No. 6,765,246, Col. 6, l. 34-52; Fig. 1.

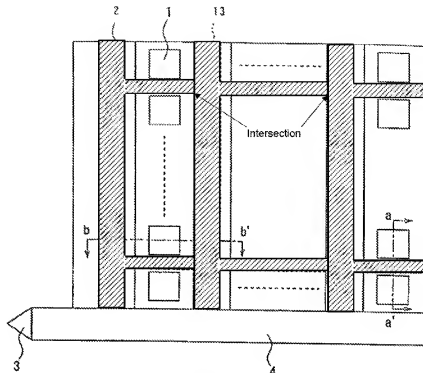


FIG. 1

As Fig. 1 of *Inagaki* shown above demonstrates, the horizontal impurity region of *Inagaki* are not continuous due to the intersection of the vertical impurity regions with the horizontal regions which segment the horizontal impurity region into discrete sections. Because *Inagaki* discloses a non-continuous horizontal impurity region opposed to an impurity region continuously formed across substantially the entire region of the semiconductor region from one end of the semiconductor region to an opposite end of the semiconductor region in a direction orthogonal to the transfer direction of said transfer register, it fails to disclose or even suggest a required element of the claim.

Further, as the Applicant's specification teaches, by providing an impurity region continuously formed across substantially the entire region of the semiconductor region from one end of the semiconductor region to an opposite end of the semiconductor region in a direction

orthogonal to the transfer direction of said transfer register, the amount of interference in the operation of the transfer region caused by the impurity region is minimized. See, U.S. Pat. Pub. 2006/0163619 Para. [0033]. Further, a sufficient potential barrier can be formed between the photo-sensors adjacent to each other preventing the vertical mixing of signals. See, U.S. Pat. Pub. 2006/0163619 Para. [0032].

Therefore, because *Inagaki* fails to disclose, or even fairly suggest, every feature of claims 1, the rejection cannot stand. Because claims 2-4, 6-7 and 11 depend either directly or indirectly from claim 1, they are allowable for at least the same reasons.

II. 35 U.S.C. § 103 Obviousness Rejection of Claims

Claims 5 and 8-10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Inagaki* in view of *Komatsu* (JP 02002231924) ("*Komatsu*"). Applicant respectfully traverses this rejection.

Claim 1 is allowable over *Inagaki* as discussed previously.

Further, *Komatsu* is an improper reference under 35 U.S.C. § 103(c). Under § 103(c) subject matter developed by another person, which qualifies as prior art under § 102(e), (f) or (g) shall not preclude patentability if the subject matter and the claimed invention were owned by the same person or under an obligation of assignment to the same entity. See, 35 U.S.C. § 103(c). Here, *Komatsu* was published on August 16, 2002. The current application claims priority to JP 2002-363261 filed on December 16, 2002, making *Komatsu* prior art under § 102(e) since it was published within one year of the filing of the current application. See, 35 U.S.C. § 102(e). Additionally, *Komatsu* and the current application were under an obligation

of assignment to Sony Corporation as evidenced by the assignment listing on *Komatsu* and the assignment of the current application in U.S. Patent and Trademark Office at Reel 017446, Frame 0639. See, JP 2002231924.

Therefore, because *Komatsu* is an improper reference under 103(c), the rejections of claims 5 and 8-10 cannot stand.

Conclusion

In view of the above amendments and remarks, Applicant submits that all claims are clearly allowable over the cited prior art, and respectfully requests early and favorable notification to that effect.

Respectfully submitted,

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